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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,065	01/12/2001	Appadurai Thangaraj	4355D (DIV)	3120

7590

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EXAMINER

NGUYEN, NGOC YEN M

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 06/24/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/760,065		THANGARAJ ET AL.	
	Examiner		Art Unit	
	Ngoc-Yen M. Nguyen		1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 26-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 26, there is no sufficient support in the instant specification for the limitation "at least a portion of said at least one metal chlorite and at least one acid forming component having no interposed material". Applicants have pointed support for such limitation in the Examples, however, in these examples, the metal chlorite is mixed directly (i.e., without coating) with the acid forming component, and however, there is no support for "at least a portion". It should be noted that silence not alone equivalent to a disclosure in the specification for a negative limitation, *Ex Parte Grasselli* 231 USPQ 393, *In re Langdon* 77 F.2d 920, 25 USPQ 415.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over CN 1,104,610 using Derwent abstract 1997-311,227 for the English abstract.

CN '610 discloses a bag for generating chlorine dioxide used to disinfect drinking water, fruit and vegetables, which is manufactured by steps including (1) melting Chinese wax, stearic acid, bees wax or paraffin wax; (ii) adding sodium chlorite to form microcapsules; (iii) mixing the dry tartaric acid or oxalic acid particles; and (iv) placing the mixture into a cloth bag (note English abstract). The cloth bag is considered as the claimed water insoluble membrane. When the bag is placed in water, the bag is considered as the second zone and the water is considered as the first zone. Since the tartaric acid as used in CN '610 is the same as the one used in the claimed invention, the pH of the tartaric acid when dissolved in water would inherently be below about 5 as required in the instant claim 39 and the produced aqueous solution of chlorine dioxide would inherently have the same pH as required in the instant claim 40.

For the limitation of "at least a portion of said at least one metal chlorite and at least one acid forming component having no interposed material", the disclosed microcapsules in CN '610 are formed by mixing the wax and the metal chlorite, thus, the wax is considered as a binder to bond the metal chlorite particles together to form the microcapsules, the metal chlorite would not be totally encapsulated by the wax, and one skilled in the art would reasonably expect that at least some metal chlorite would be exposed at the surface, such exposed metal chlorite and the acid forming compound would have no interposed material as required in the instant claims.

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The CN '610 discloses that the wax and the chlorite were formed into microcapsules, however, no size was disclosed.

However, the microcapsules as disclosed in CN '610 can be considered as tablets, powders, granules, pellets or agglomerates depending on its size and shape, especially because a wax (i.e. a binder) was used. It would have been obvious to one ordinary skill in the art to optimize the size of the microcapsules of CN '610 in order to obtain the best results.

Claims 26-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 581 550 in view of either CN 1,104,610 or CA 959,238.

EP '550 discloses a solid composition capable of releasing chlorine dioxide upon dissolution in water, said composition comprising:

- a. a water soluble chlorite salt
- b. an oxidizing chlorine-releasing agent, in the form of one or more sodium- and/or potassium-dichloro-s-triazinetriene(s)s and/or trichloro-s-triazinetriene(s); and
- c. a proton-donor serving as a water-soluble agent capable of lowering the pH of an aqueous solution to less than 3 (note claim 1).

For the size of the composition, i.e., whether the composition is in the form of powder, tablet or agglomerate, such limitation is not seen as a patentable difference because it would have been obvious to one skilled in the art to select the proper form for the composition as long as the composition can still react to form chlorine dioxide when it contacts water.

The difference is EP '550 does not teach a membrane that separates the solid composition and the water solution.

CN '610 is applied as stated above to teach that it is known and convenient way to place the chlorine generating composition in a bag so that the composition can be added to the water in a pre-measured amount by throwing the bag in the water.

Alternatively, CA '238 can be applied as stated below.

CA '238 discloses a process for producing chlorine dioxide by introducing water into a receptacle which contains a chlorite of an alkali metal or an alkaline earth metal and an acid. The chlorite and the acid are wrapped or packed in a water soluble envelope or container so that upon the introduction of water into the receptacle, the water soluble envelopes dissolve, to react and to form chlorine dioxide which is immediately absorbed by the water to form an aqueous chlorine dioxide or chlorous acid solution (note page 4, first full paragraph).

For claim 60, it would have obvious to one skilled in the art to use any water soluble material, including Kraft paper to form the envelope for the chlorine-generating composition. Without a showing of criticality or unexpected results, the use of Kraft paper is not seen as a patentable difference.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to put the chlorine-generating composition in a bag, either a water-insoluble one as suggested by CN '244 or a water-soluble one as suggested by CA '238 to form bags of pre-measured amount of the chlorine-generating composition and such bags would be conveniently added to the water to form chlorine dioxide.

Applicant's arguments filed April 11, 2003 have been fully considered but they are not persuasive.

Applicants urge that the claimed invention requires that at least a portion of the metal chlorite and the acid forming component having no interposed material between them.

As stated in the 112, 1st paragraph rejection, this limitation is considered as new matter.

Applicants argue that stearic acid is not water soluble.

The reasoning that stearic acid can be considered as the acid-forming component is withdrawn from the rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ngoc-Yen Nguyen whose telephone number is (703) 308-2536. The examiner is currently on a part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 872-9311 (for OFFICIAL After Final amendment only) or (703) 872-9310 (for all other OFFICIAL faxes). UNOFFICIAL fax can be sent to (703) 305-6078.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

N. M. Nguyen
6/22/03



N. M. Nguyen
Primary Examiner
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